

## **REMARKS**

### **Status**

This Amendment is responsive to the Office Action dated May 12, 2009, in which claims 1-28 were rejected. Claim 10 has been amended; and claims 25 - 28 have been withdrawn. Accordingly, claims 1-24 are pending in the application, and are presented for reconsideration and allowance.

### **Restriction Requirement**

The Office Communication dated February 3, 2009 required an election between claims 1 – 24, and claims 25 – 28, indicating that the claim sets were drawn to different inventions. In response to this communication, applicants elected the invention embodied in claims 1 – 24 for prosecution and requested that claims 25 – 28 be withdrawn. In the present Office communication reference is made to action on withdrawn claims 25 – 28. In a telephone conference with the Examiner, applicants' attorney was informed that there had been an apparent error and that the matters relating only to claims 1 – 24 should be addressed. Therefore, since claims 25 – 28 have been withdrawn, only the matters relating to claims 1 – 24 are addressed in this response.

### **Claim Rejection - 35 USC 101**

Claim 10 stands rejected under 35 USC 101, as not falling within one of the four statutory categories of invention. Claim 10 has been amended to define the method of the claim as being carried out by an in vivo camera system. The Field of the Invention states "This invention relates generally to an in vivo camera system". Thus, no new matter is added. The method of claim 10 is tied to a particular apparatus and fully satisfies the requirements of 35 USC 101. Accordingly, it is respectfully requested that this rejection be reconsidered and withdrawn.

### **Claim Rejection – Double Patenting**

Claims 1, 10, 19, and 25 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims

1 – 9 of US Patent No. 7,319,781. It is the intention of applicants to file a terminal disclaimer in this application after allowable subject matter is found in order to overcome this rejection.

### **Claim Rejection - 35 USC 103**

Claims 1 – 24 stand rejected under 35 USC 103 as being unpatentable over US Patent No. 7,215,338 (Horn) in view of US Patent No. 6,950,690 (Meron). This rejection is respectfully traversed.

According to the present invention there is provided system and method for classifying images captured by an in vivo camera system according to anatomical structure.

According to the invention defined by claim 1 there is provided a system for identifying anatomical structure depicted in an in vivo image, comprising: a) an examination bundle that includes an in vivo image; b) a gastrointestinal atlas that includes a list of individual anatomical structures and characterization data of the individual anatomical structures; and c) a classification engine that analyzes the examination bundle and the gastrointestinal atlas to identify the anatomical structure depicted in the in vivo image.

According to the invention defined by claim 10 there is provided, a method for identifying anatomical structure depicted in an in vivo image, the method being carried by an in vivo camera system and comprising the steps of a) providing an examination bundle that includes an in vivo image; b) providing a gastrointestinal atlas that includes a list of individual anatomical structures and characterization data of the individual anatomical structures; and c) analyzing the examination bundle and the gastrointestinal atlas to identify the anatomical structure depicted in the in vivo image.

According to the invention defined by claim 19 there is provided, A system for identifying anatomical structure depicted in an in vivo image, comprising: a) an examination bundle that includes a captured in vivo image; b) a gastrointestinal atlas that includes a list of individual anatomical structures and characterization data of the individual anatomical structures; and c) a means

for analyzing the examination bundlette and the gastrointestinal atlas to identify the anatomical structure depicted in the captured in vivo image.

The claimed invention has the following advantage: automatic classification of the in vivo images according to anatomical structure enables the physician to view in vivo images of a specific anatomical structure or structures without having to waste valuable time in manually searching the in vivo video.

Neither Horn nor Meron, alone or in combination, render unpatentable the claimed invention. Horn, principally relied upon by the examiner, discloses “an in-vivo sensing system and a method for creating a summarized graphical presentation of a data stream captured in-vivo. The graphical presentation may be in the form of a color bar.” (Horn. Abstract, lines 1 – 4). Contrary to the statements that Horn discloses a gastrointestinal atlas that includes a list of individual anatomical structures and characterization data of the individual anatomical structures, it is respectfully submitted that a careful study of Horn reveals that the phrase “gastrointestinal atlas” or a reasonable equivalent is nowhere to be found in the Horn patent. In addition, there is no disclosure in Horn of a classification engine that analyzes an examination bundlette and the gastrointestinal atlas to identify the anatomical structure depicted in the in vivo image. Although the passages from Horn cited by the Examiner disclose visual representations of the passage of an in vivo camera through anatomical structure such as the GI tract, there is no disclosure in Horn, how the data visually presented is determined according to the claimed invention. Thus, the passage at Horn, col. 3, lines 1 – 38, states “Embodiments of the present invention offer a device, system and method for generating a fixed graphical presentation of a captured data stream, ... the presentation may ... give indication of the relationship between the data stream captured and the anatomical origin or position relative to a start of the captured data stream”, but discloses no process by which such presentation is determined. The passage at Horn, col.7, lines 1 – 40, states “Changes in the color scheme of the images may be used to identify, for example, passage through a specific anatomical site, for example, the duodenum, cecum, or other sites, ...”. Again, there is no disclosure in Horn regarding how the presentation data is determined. Still further, there is no disclosure in Horn of

using a gastrointestinal atlas and classification engine using such atlas for such a determination. The reference to Figs. 4A and 4B and description at Horn, col. 7, line 52 and following, again refers to the graphical presentation in the form of bars to map out physiological measurements over time or over an anatomical path. However, there is no disclosure how the graphical data is determined and no disclosure that such data was determined using a gastrointestinal atlas and classification engine using such an atlas. The cited passage at Horn, col. 9, line 3 and following describing Fig. 6, states “Reference is now made to Fig. 6 showing a flow chart of a method for presentation of an in vivo data stream ...”. The described method does not disclose the use of a gastrointestinal atlas with a classification engine to identify the anatomical structure in an in vivo image as defined by the invention of claims 1 – 24. Although other physiological parameters may also be graphically presented, such as temperature values, the passage is silent about the use of the claimed gastrointestinal atlas and associated classification engine.

It is submitted that claims 1 – 24 are clearly nonobvious and patentable over Horn

Meron is cited to fill in the deficiencies of the disclosure in Horn. As stated in the Office communication at page 6, Horn “does not explicitly state its corresponding “the gastrointestinal atlas to identify the anatomical structure”. As pointed out above, nowhere in Horn is the phrase “gastrointestinal atlas” used. Thus Horn is far more deficient in its disclosure than cited in the office communication. Meron is cited for recording first and second images of a gastrointestinal tract captured by a swallowable imaging device and performing image analysis by comparing the two images. It is respectfully submitted that Meron is inapplicable to the invention defined by claims 1 – 24. In the method and system of the claimed invention, there is no comparison between in vivo images to determine anatomical structure. Rather, the comparison is between an in vivo image and a gastrointestinal atlas previously stored in the camera system memory. The two comparison techniques are quite different and the disclosure of the Meron technique is inapplicable to the claimed invention.

It is respectfully submitted that claims 1 – 24 are nonobvious and patentable over Horn and Meron and should be allowed.

**Summary**

Should the Examiner consider that additional amendments are necessary to place the application in condition for allowance, the favor is requested of a telephone call to the undersigned counsel for the purpose of discussing such amendments.

For the reasons set forth above, it is believed that the application is in condition for allowance. Accordingly, reconsideration and favorable action are respectfully solicited.

Respectfully submitted,



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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Carestream Health, Inc. at 585/627-6687 or 585/627-6740.